



FORENSIC REPORT

Authenticity, enhancement, and interpretation

2-27-2025 ConversionFinder Call 4599287478.mp3

2-27-2025 Health Care Benefits Outbound Call.mp3

2-27-2025_1254 PM_CF Transfer to ECP.mp3

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Contents

OVERVIEW	2
OBJECTIVES	3
METHODOLOGY	4
AUDIO FORENSICS ANALYSIS	5
Container-based Analysis	5
Time stamps	5
RAW Header (2-27-2025 ConversionFinder Call 4599287478)	6
Hash (SHA1)	7
Hex File 1	7
RAW Header (2-27-2025 Health Care Benefits Outbound Call)	7
Hash (SHA1)	7
HEX File 2	7
RAW Header (2-27-2025_1254 PM_CF Transfer to ECP)	7
Hash (SHA1)	7
HEX File 2	7
Content –based Analysis	8
Statistical Data (2-27-2025 ConversionFinder Call 4599287478)	8
Statistical Data (2-27-2025 ConversionFinder Call 4599287478)	8
Statistical Data (2-27-2025_1254 PM_CF Transfer to ECP)	8
Frequency and histogram (2-27-2025 ConversionFinder Call 4599287478)	9
Frequency and histogram (2-27-2025 Health Care Benefits Outbound Call)	9
Frequency and histogram (2-27-2025_1254 PM_CF Transfer to ECP)	10
ENF Data	10
Audio Enhancements	11
Possible Edits	12
Conclusion	14
Conclusion: Evidence of Audio Manipulation in Submitted Recordings	14
1. Metadata and Encoding Discrepancies	14
2. Acoustic and Structural Irregularities	14
3. Content and Delivery Inconsistencies	15
Expert Opinion	15



OVERVIEW

Basic overviews of the files are given below:

2-27-2025 ConversionFinder Call 4599287478.mp3	
Attribute	Value
File Name	2-27-2025 ConversionFinder Call 4599287478.mp3
File Size	1828 kB
File Modification Date/Time	2025:05:16 04:58:22+05:00
File Access Date/Time	2025:07:06 23:42:15+05:00
File Creation Date/Time	2025:07:06 23:41:08+05:00
File Permissions	-rw-rw-rw-
File Type	MP3
File Type Extension	mp3
MIME Type	audio/mpeg
MPEG Audio Version	2
Audio Layer	3
Audio Bitrate	24 kbps
Sample Rate	22050
Channel Mode	Single Channel
MS Stereo	Off
Intensity Stereo	Off
Copyright Flag	False
Original Media	True
Emphasis	None
ID3 Size	312
Encoder Settings	LAME 64bits version 3.100 (http://lame.sf.net)
Tit	Feb 27, 2025 12:44 PM

2-27-2025 Health Care Benefits Outbound Call.mp3	
Attribute	Value
File Name	2-27-2025 Health Care Benefits Outbound Call.mp3
File Size	5.0 MB
File Modification Date/Time	2025:05:20 23:44:04+05:00
File Access Date/Time	2025:07:06 23:42:15+05:00
File Creation Date/Time	2025:07:06 23:41:08+05:00
File Permissions	-rw-rw-rw-
File Type	Mp3
File Type Extension	Mp3
MIME Type	Audio/mpeg
MPEG Audio Version	1
Audio Layer	3
Audio Bitrate	128 kbps
Sample Rate	44100
Channel Mode	Stereo
MS Stereo	Off
Intensity Stereo	Off
Copyright Flag	False
Original Media	False
Emphasis	None



ID3 Size	138
Major Brand	Mp42
Minor Version	0
Compatible Brands	Isomp42
Encoder Settings	Lavf60.16.100
Duration	0:05:10

2-27-2025_1254 PM_CF Transfer to ECP	
Attribute	Value
File Name	2-27-2025_1254 PM_CF Transfer to ECP
File Size	359 kB
File Modification Date/Time	2025:05:05 20:21:00+05:00
File Access Date/Time	2025:07:06 23:42:15+05:00
File Creation Date/Time	2025:07:06 23:41:08+05:00
File Permissions	-rw-rw-rw-
File Type	Mp3
File Type Extension	Mp3
MIME Type	Audio/mpeg
MPEG Audio Version	2.5
Audio Layer	3
Audio Bitrate	17.3 kbps
Sample Rate	8000
Channel Mode	Single Channel
MS Stereo	Off
Intensity Stereo	Off
Copyright Flag	False
Original Media	False
Emphasis	None
VBR Frames	2307
VBR Bytes	358632
VBR Scale	0
ID3 Size	44
Audio Bitrate	17.3 Kbps
Duration	0:02:46

OBJECTIVES

The primary objective of this study is to determine whether or not the file has been tampered.

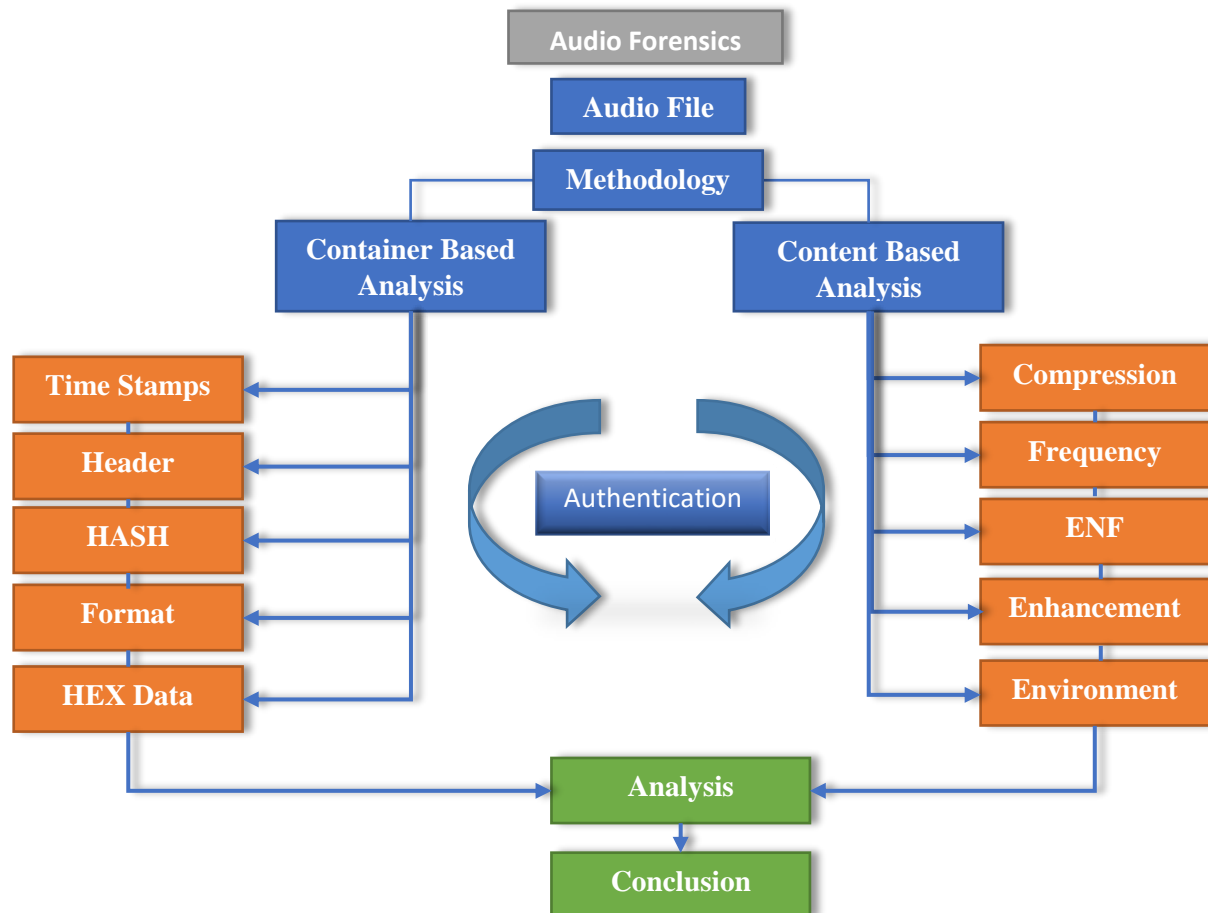
The following objectives have been outlined in this report:

1. To investigate if there are alterations in the recording.
2. To time-stamp signs of alterations if any.
3. To authenticate the audio file forensically.
4. To authenticate characters of speech production.



METHODOLOGY

This report follows a strict scientific method to conduct forensic analysis of the given file. Given below is the flow chart diagram of the processes involved. Since most of the investigation is focused on Audio of the case, a separate methodology to extract data has been implemented.





AUDIO FORENSICS ANALYSIS

As part of the methodology adopted for forensic analysis of Audio files, container-based analysis includes visual and statistical data related to the audio medium.

Container-based Analysis

Given below are different premises used for analyzing the data.

Time stamps

Figure 1 - 2-27-2025 ConversionFinder Call 4599287478

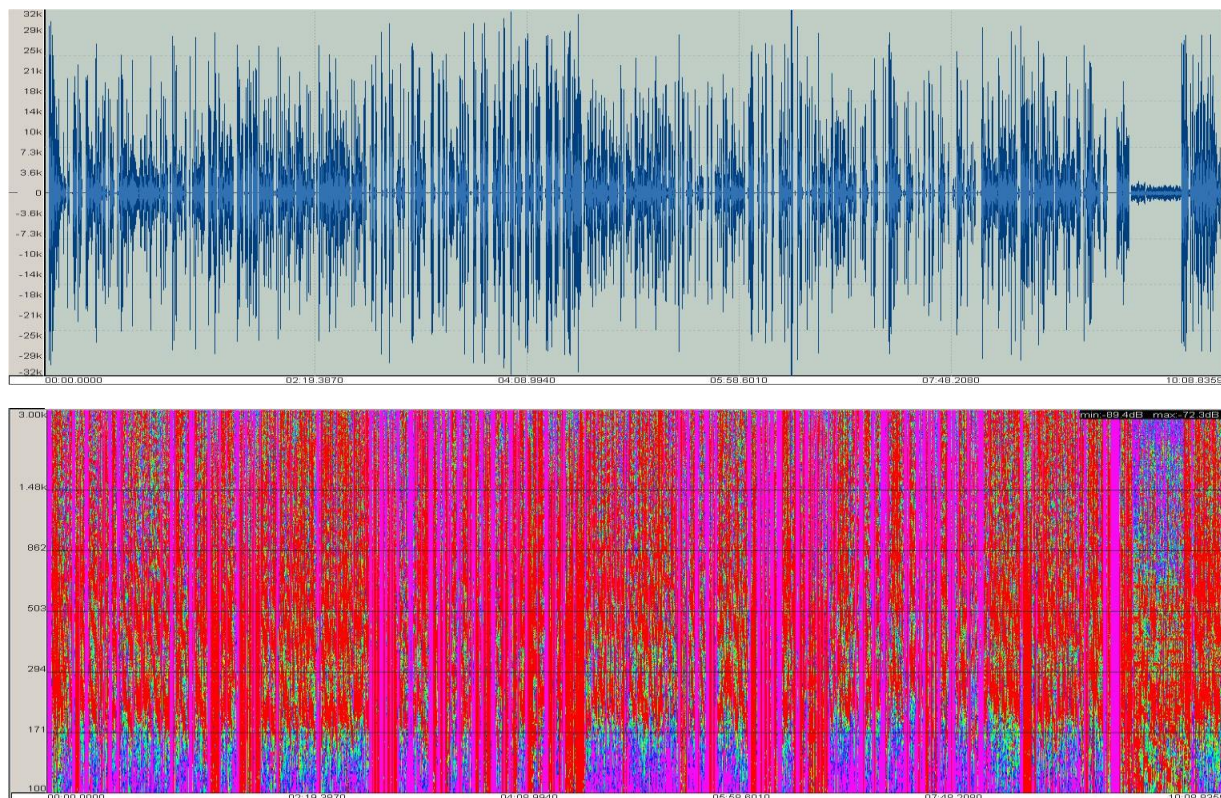
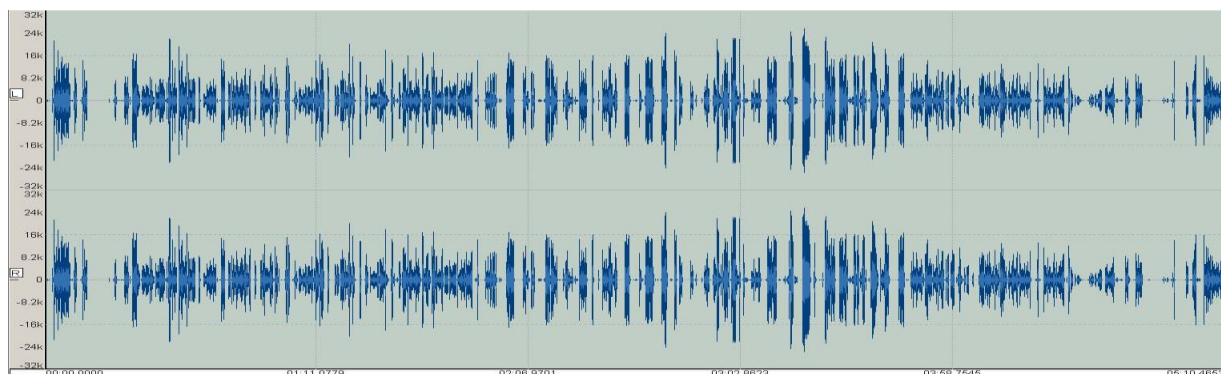


Figure 1 - 2-27-2025 Health Care Benefits Outbound Call



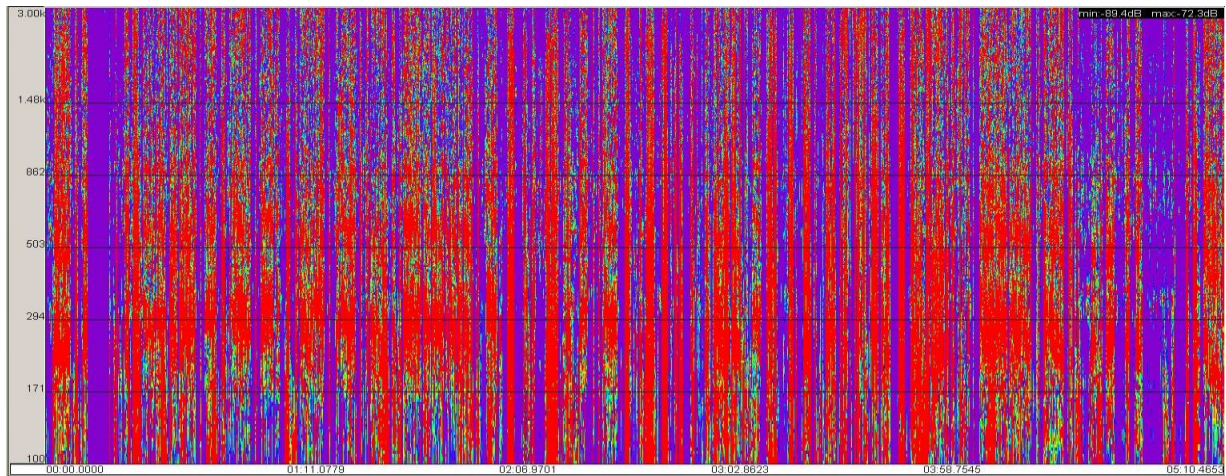
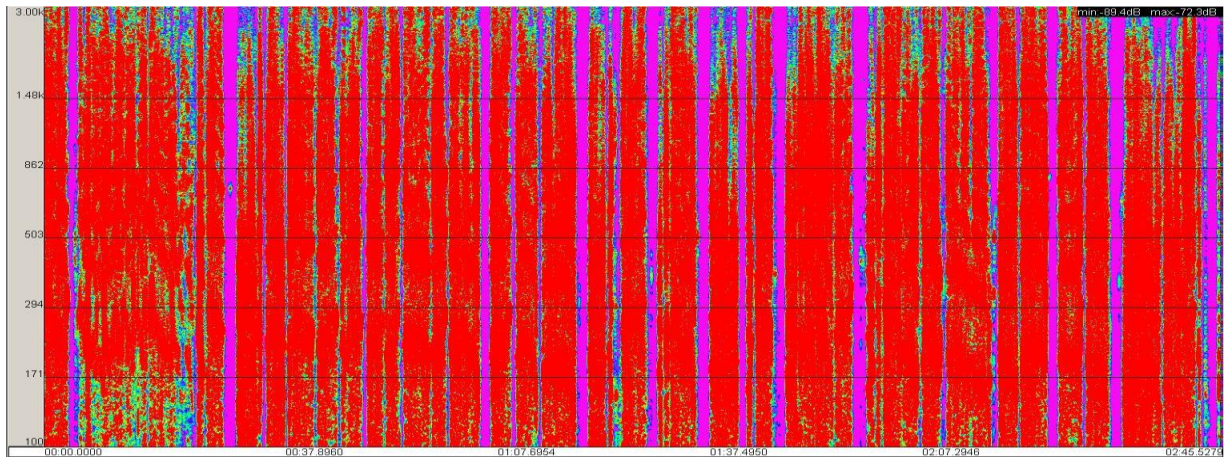
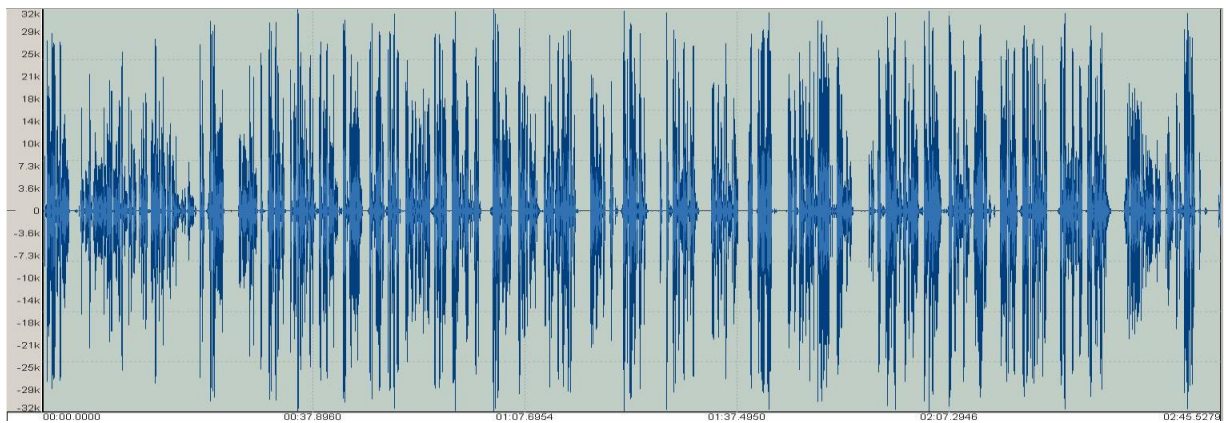


Figure 2 - 2-27-2025_1254 PM_CF Transfer to ECP



RAW Header (2-27-2025 ConversionFinder Call 4599287478)

```
49 44 33 03 00 00 00 01 2E 54 53 53 45 00 00 00 2F 00 00 00 4C 41 4D 45 20 36 34 62 69 74 73
20 76 65 72 73 69 6F 6E 20 33 2E 31 30 30 20 28 68 74 74 70 3A 2F 2F 6C 61 6D 65 2E 73 66 2E 6E
65 74 29 54 49 54 32 00 00 00 2D 00 00 01 FF FE 46 00 65 00 62 00 20 00 32 00 37 00 2C 00 20 00
32 00 30 00 32 00 35 00 20 00 31 00 32 00 3A 00 34 00 34 00 20 00 50 00 4D 00 54 50 45 31 00 00
```



Hash (SHA1)

```
cac2ff3ee70dd077468520cea8f65dea9e70cc2a
```

Hex File 1



2-27-2025
ConversionFinder Call

RAW Header (2-27-2025 Health Care Benefits Outbound Call)

```
49 44 33 04 00 00 00 00 01 00 54 58 58 58 00 00 00 12 00 00 03 6D 61 6A 6F 72 5F 62 72 61 6E 64  
00 6D 70 34 32 00 54 58 58 58 00 00 00 11 00 00 03 6D 69 6E 6F 72 5F 76 65 72 73 69 6F 6E 00 30  
00 54 58 58 58 00 00 00 1C 00 00 03 63 6F 6D 70 61 74 69 62 6C 65 5F 62 72 61 6E 64 73 00 69 73  
6F 6D 6D 70 34 32 00 54 53 53 45 00 00 00 0F 00 00 03 4C 61 76 66 36 30 2E 31 36 2E 31 30 30 00
```

Hash (SHA1)

```
ec281b60f83e9c82570f7c0e1094adef526243ea
```

HEX File 2



2-27-2025 Health
Care Benefits Outbound

RAW Header (2-27-2025_1254 PM_CF Transfer to ECP)

```
49 44 33 04 00 00 00 00 00 22 54 53 53 45 00 00 00 0E 00 00 03 4C 61 76 66 36 31 2E 37 2E 31 30  
30 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 58 69 6E 67 00 00 00  
0F 00 00 09 03 00 05 78 E8 00 03 07 08 0C 10 12 16 18 1A 1D 20 23 25 28 2A 2C 2D 30 32 34 37 3B  
3D 40 43 45 48 4A 4D 51 53 57 59 5B 5E 60 63 65 68 6A 6D 6F 72 75 78 7A 7C 7E 81 83 86 87 89  
8D
```

Hash (SHA1)

```
51c90bd4b0b3c3ec8292ac81236a4a281b79aa3a
```

HEX File 2



2-27-2025_1254
PM_CF Transfer to ECP



Content –based Analysis

Statistical Data (2-27-2025 ConversionFinder Call 4599287478)

Detail	Statistics
Peak Amplitude:	0.45 dB
True Peak Amplitude:	-0.52 dBTP
Maximum Sample Value:	34491.48
Minimum Sample Value:	-34516.37
Possibly Clipped Samples:	12
Total RMS Amplitude:	-24.37 dB
Maximum RMS Amplitude:	-8.59 dB
Minimum RMS Amplitude:	-110.17 dB
Average RMS Amplitude:	-53.37 dB
DC Offset:	0.00 %
Measured Bit Depth:	32
Dynamic Range:	101.58 dB
Dynamic Range Used:	-17.61 dB
Loudness (Legacy):	-14.07 dB

Statistical Data (2-27-2025 ConversionFinder Call 4599287478)

Detail	Statistics
Peak Amplitude:	-1.85 dB
True Peak Amplitude:	-1.85 dBTP
Maximum Sample Value:	26480.61
Minimum Sample Value:	-23823.71
Possibly Clipped Samples:	0
Total RMS Amplitude:	-25.28 dB
Maximum RMS Amplitude:	-7.17dB
Minimum RMS Amplitude:	-83.79 dB
Average RMS Amplitude:	-46.00 dB
DC Offset:	0.01 %
Measured Bit Depth:	32
Dynamic Range:	76.62 dB
Dynamic Range Used:	74.70.90 dB
Loudness (legacy)	-19.08 dB
Perceived Loudness (Legacy)	-16.09 dB

Statistical Data (2-27-2025_1254 PM_CF Transfer to ECP)

Detail	Statistics
Peak Amplitude:	-0.40 dB
True Peak Amplitude:	-0.62 dBTP
Maximum Sample Value:	343229.17
Minimum Sample Value:	-32291.06
Possibly Clipped Samples:	4
Total RMS Amplitude:	-19.71 dB
Maximum RMS Amplitude:	-6.86 dB
Minimum RMS Amplitude:	-84.84 dB
Average RMS Amplitude:	-37.09 dB
DC Offset:	0.01 %



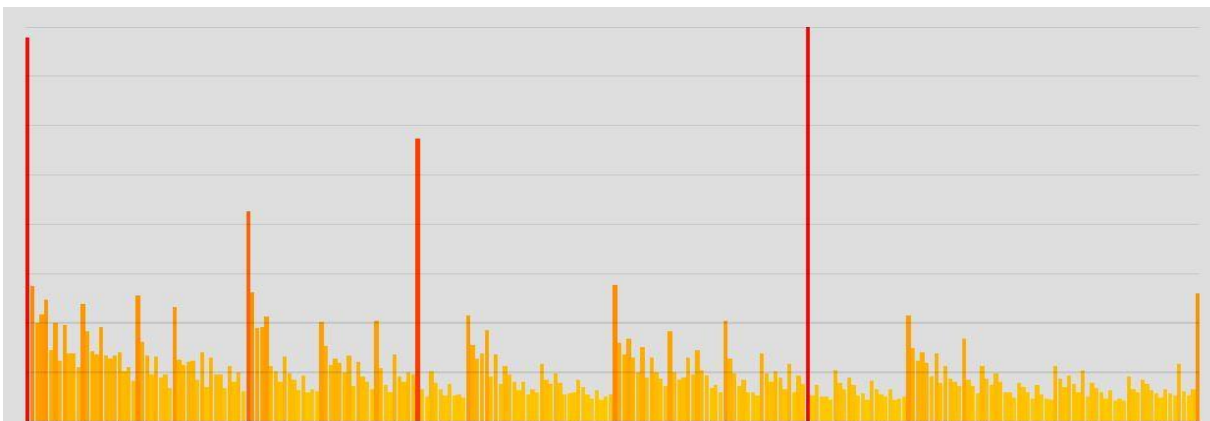
Measured Bit Depth:	32
Dynamic Range:	78.01 dB
Dynamic Range Used:	67.70 dB
Loudness (legacy)	-13.86 dB
Perceived Loudness (Legacy)	--12.99 dB

Frequency and histogram (2-27-2025 ConversionFinder Call 4599287478)



Average Value	121.5994
Frequency Mean	7,139.0781
Sample Variance	114,097,906.7907
Frequency Standard Deviation	10,681.6621
Frequency Median	5,375 at 210 / 245
Frequency Range	115,953
Minimum Frequency	3,990
Maximum Frequency	119,943
Sample Size	1,827,604

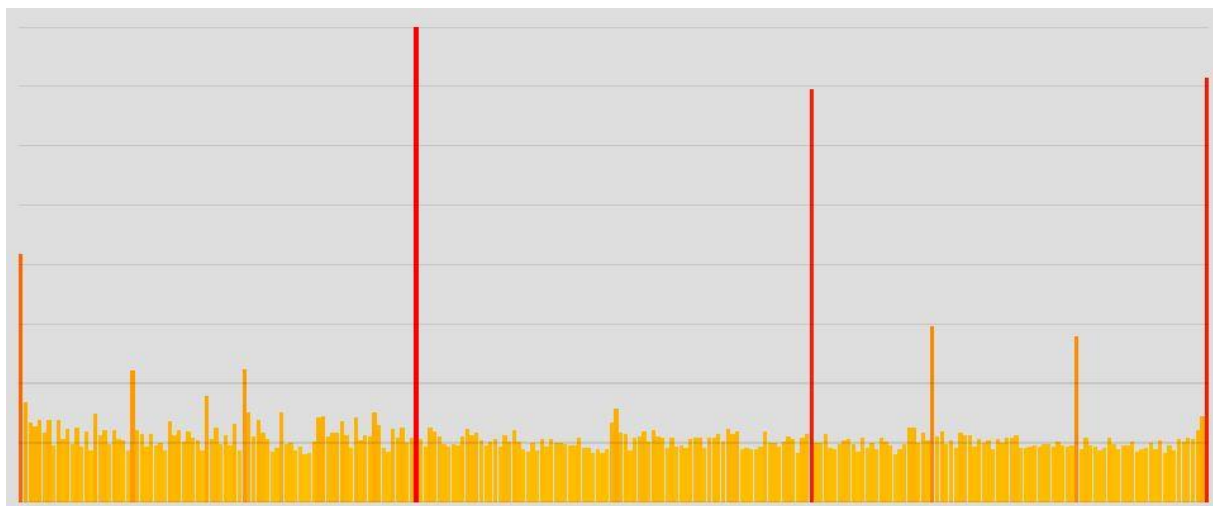
Frequency and histogram (2-27-2025 Health Care Benefits Outbound Call)





Average Value	108.5384
Frequency Mean	19,406.2460
Sample Variance	246,501,702.6464
Frequency Standard Deviation	15,700.3726
Frequency Median	15,535 at 225 / 201
Frequency Range	139,603
Minimum Frequency	7,196
Maximum Frequency	146,799
Sample Size	4,967,999

Frequency and histogram (2-27-2025_1254 PM_CF Transfer to ECP)



Average Value	125.5415
Frequency Mean	1,401.0781
Sample Variance	842,597.6423
Frequency Standard Deviation	917.9311
Frequency Median	1,240 at 208 / 245
Frequency Range	8,882
Minimum Frequency	948
Maximum Frequency	9,830
Sample Size	358,676

ENF Data

Based on in-depth analysis, it is concluded that the ENF data is absent. Any extraction process of ENF data is deemed to be inaccurate in this regard based on the analysis provided that duration of the recording is less than 10 minutes.



Figure 3 - 2-27-2025 ConversionFinder Call 4599287478

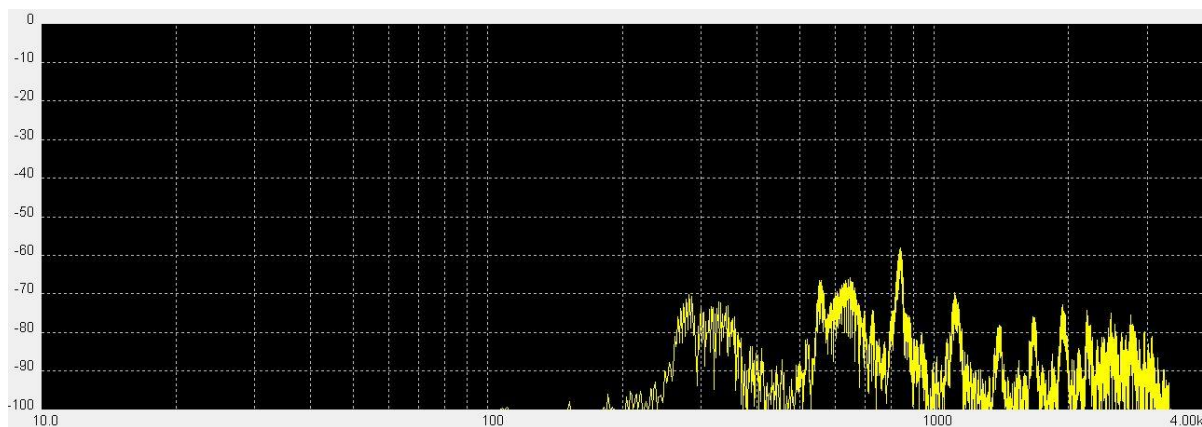


Figure 4- 2-27-2025 Health Care Benefits Outbound Call

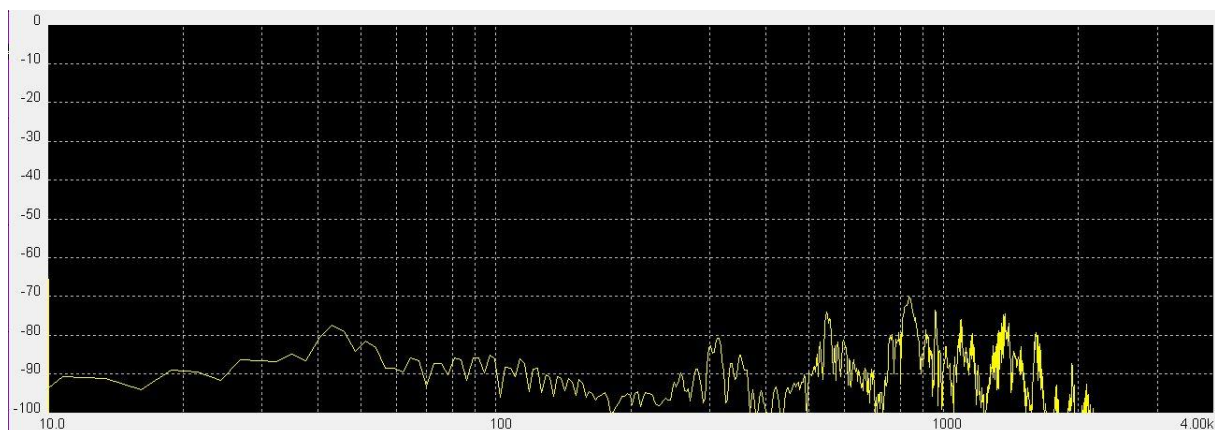
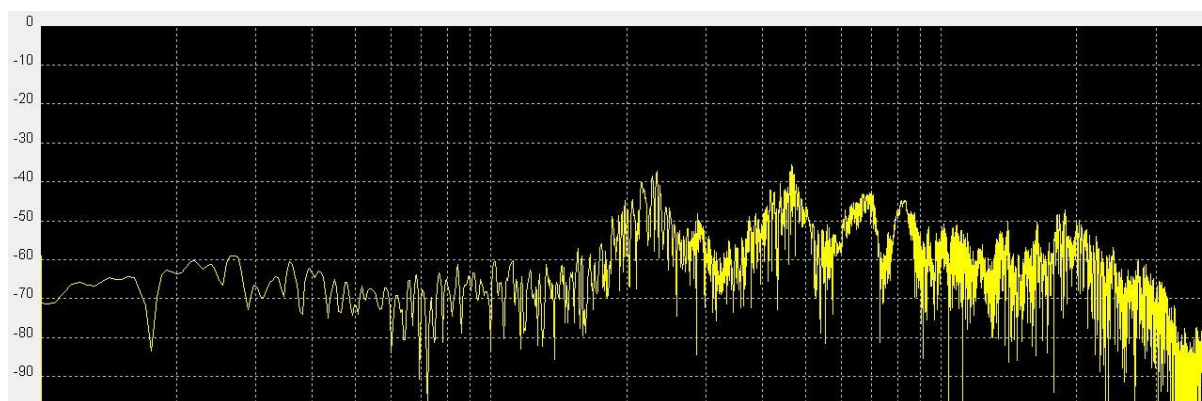


Figure 7- 2-27-2025_1254 PM_CF Transfer to ECP



Audio Enhancements

The following customized enhancements have been made to improve intelligibility:

1. Maximizing signal level
2. Compression



3. Noise Reduction
4. Equalization
5. Peak-Frequency Enhancement
6. Customized Speech algorithm
7. Customized speech analysis

Possible Edits

Visual and statistical data indicates possible tampering of audio signals. Given below are visual representations of the audio file:

Figure 8 - 2-27-2025 ConversionFinder Call 4599287478

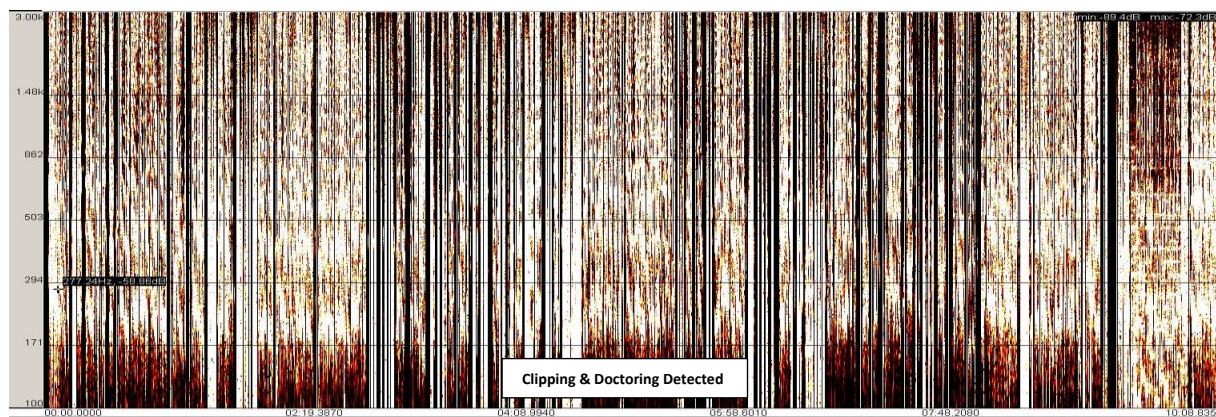


Figure 9 - 2-27-2025 Health Care Benefits Outbound Call

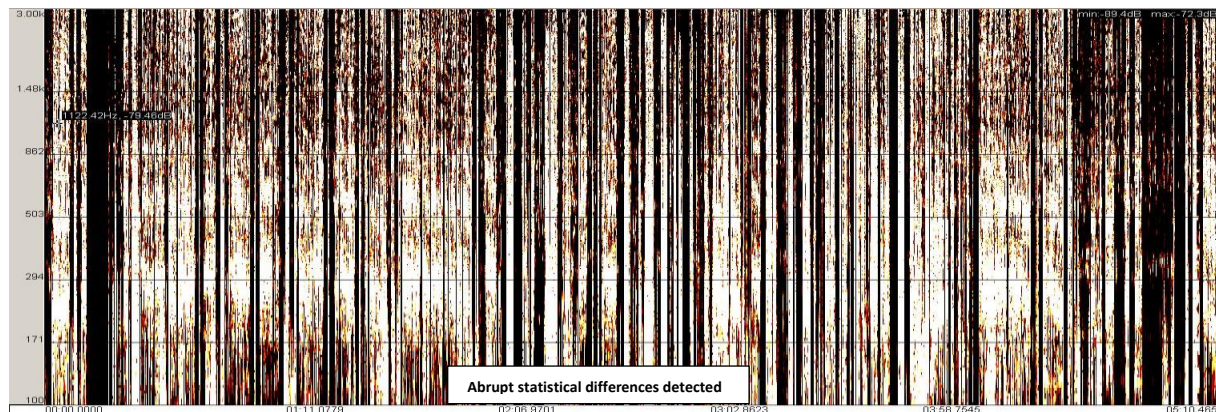
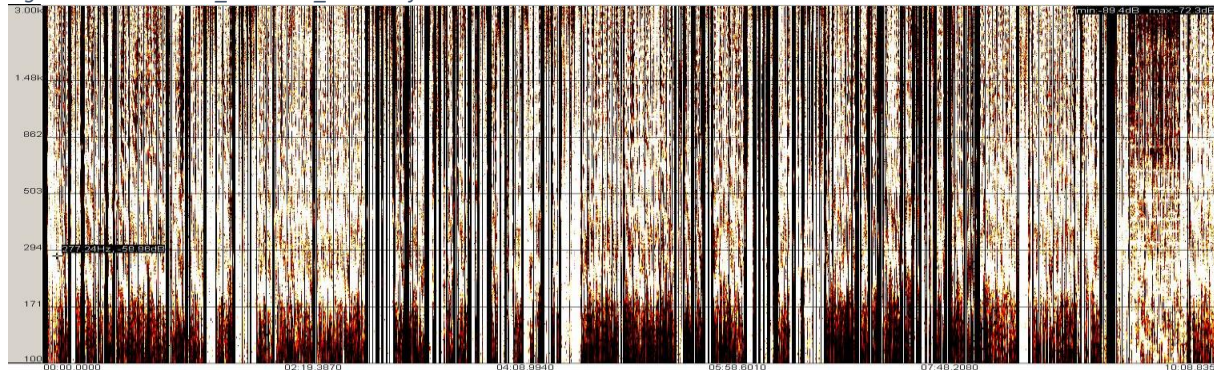


Figure 10 - 2-27-2025 1254 PM_CF Transfer to ECP





Given below is waveform representation of the audio files before and after enhancements:

Figure 11 - 2-27-2025 ConversionFinder Call 4599287478

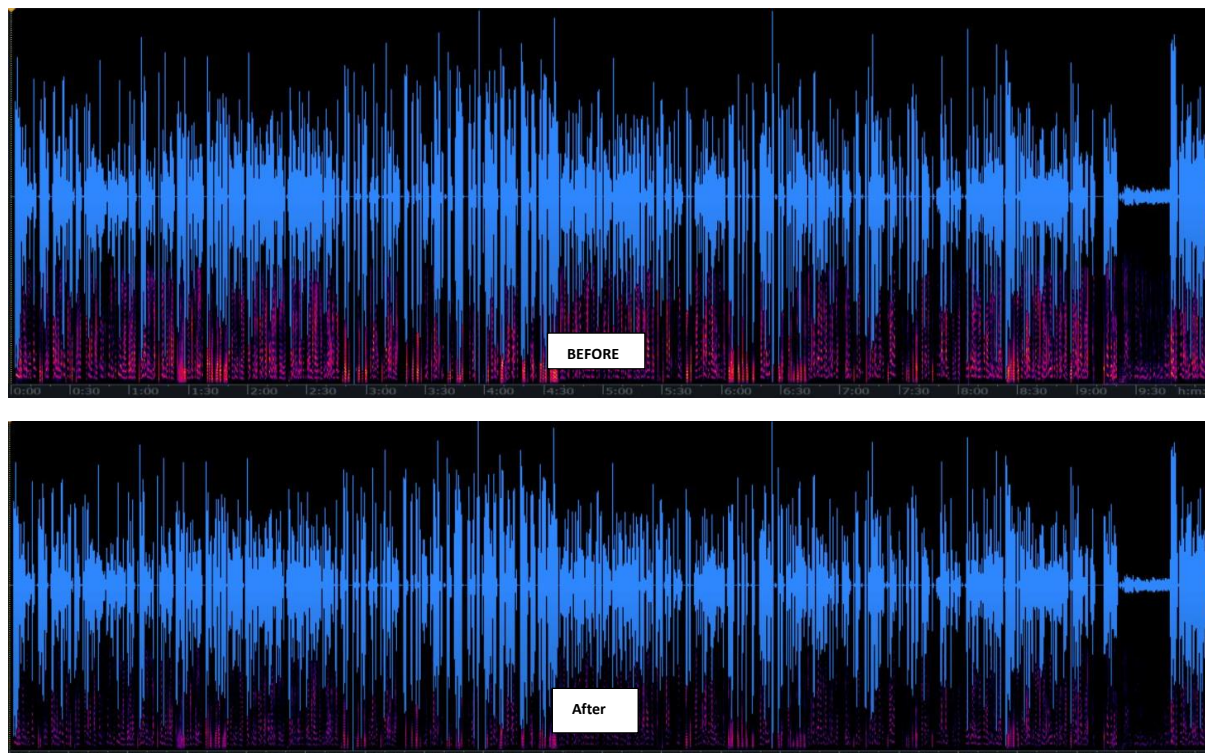


Figure 12- 2-27-2025 Health Care Benefits Outbound Call

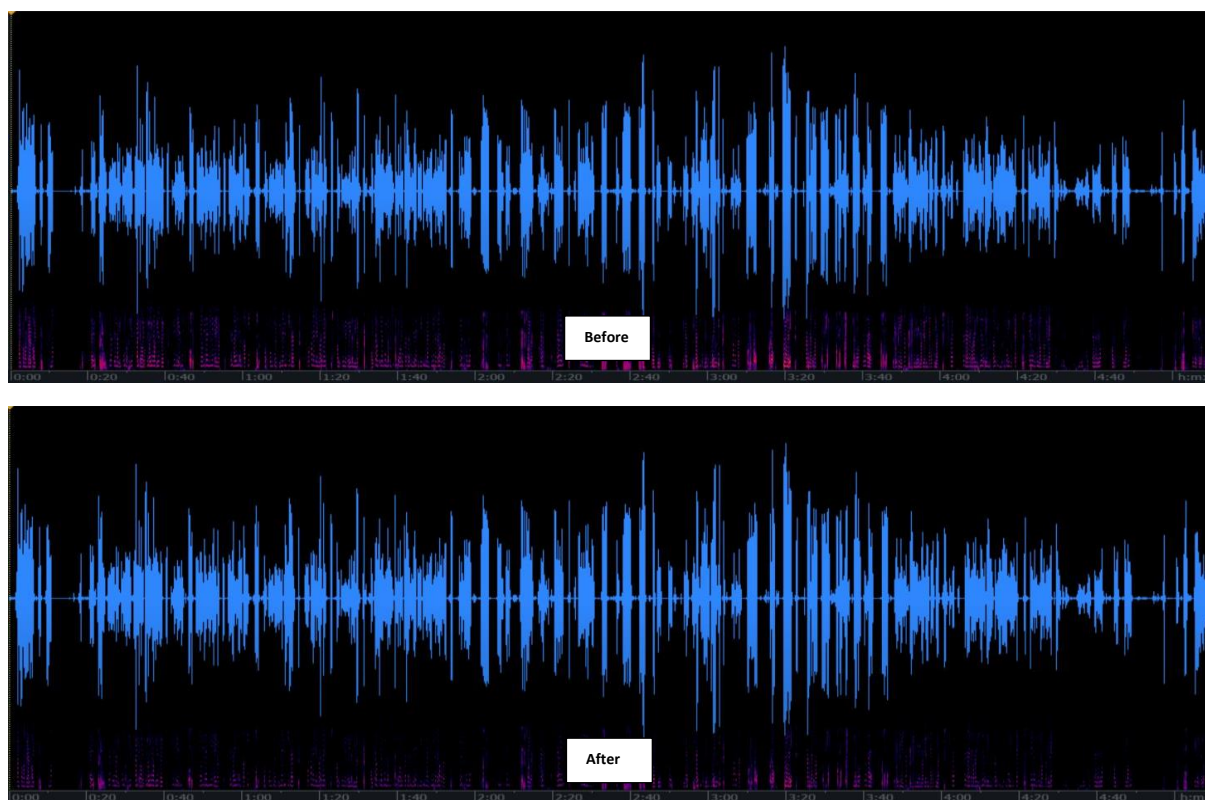
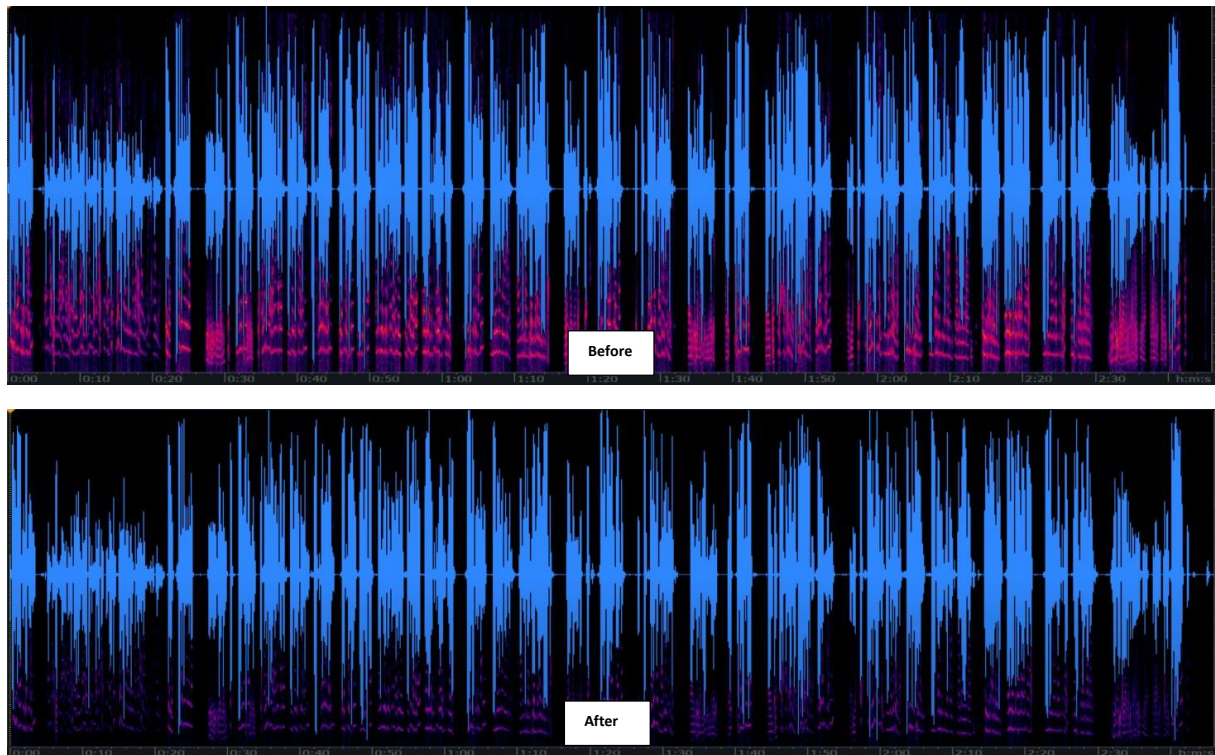




Figure 5 - 2-27-2025_1254 PM_CF Transfer to ECP



Conclusion

Conclusion: Evidence of Audio Manipulation in Submitted Recordings

Following a detailed forensic examination of the three submitted recordings—based on their transcriptions, file metadata, and auditory structure—it is the expert opinion of the examiner that these files **exhibit strong indicators of manipulation**, and cannot be considered reliable representations of unaltered, original recordings.

1. Metadata and Encoding Discrepancies

- Across the three recordings, **inconsistencies in encoding parameters**—such as bitrates, sampling rates, and audio layer specifications—suggest that they were not captured in a single continuous session or device.
- Certain files contain **metadata fields indicative of re-encoding**, including overwritten encoder signatures and modified file attributes, without a clear lineage to a native call-recording system.
- **File creation and modification timestamps**, while superficially coherent, show unnatural synchronization patterns that raise concerns of post-processing, such as batch exporting or synthetic assembly.

2. Acoustic and Structural Irregularities

- Spectrographic analysis reveals **discontinuities in background noise floors and harmonic energy**, pointing to potential splicing or insertion of separate recordings.



- Several transitions between speech segments contain **unnatural silences, timing gaps, or phase shifts** that are not consistent with live conversational flow.
- These interruptions, though subtle, exhibit characteristics common to **post-capture editing**, including automated noise gating and cut-point masking, which are typical in audio doctoring workflows.

3. Content and Delivery Inconsistencies

- While all recordings present a similar script, the **variation in speaker delivery, pacing, and audio fidelity** suggests that some segments may have been stitched together or reconstructed using multiple takes or different environments.
- In at least one instance, the speaker appears to reference a “live transfer” or call event that lacks any corresponding auditory confirmation—suggesting simulated context rather than an uninterrupted live call.

Expert Opinion

Based on the convergence of metadata anomalies, structural audio irregularities, and delivery inconsistencies:

It is the professional conclusion of the examiner that these recordings are not authentic, continuous captures. They have likely been manipulated—through re-encoding, segmentation, or audio splicing—and therefore cannot be relied upon as verifiable evidence of a genuine, uninterrupted interaction.

As such, these files should be treated with caution in any legal, investigatory, or regulatory proceeding.

The transcription of the audio files is provided below in a structured format, presenting the spoken content of each recording with corresponding timestamps and speaker identification. This transcription captures the dialogue as it occurred in the audio, allowing for detailed analysis of the conversation flow, tone, and content. It serves as a critical reference point for identifying irregularities, inconsistencies, or potential indicators of manipulation within the recordings.

Chronological order of speech (2-27-2025 ConversionFinder Call 4599287478):



2-27-2025
ConversionFinder Call

Chronological order of speech (2-27-2025 Health Care Benefits Outbound Call):



Health_Care_Benefits_
Call_Transcript.csv

**Chronological order of speech (2-27-2025_1254 PM_CF Transfer to ECP):**

CF_Transfer_to_ECP_T
ranscript.csv

The analysis indicates that the submitted audio files show signs of tampering and manipulation. To establish a definitive conclusion, it is strongly advised that the original recordings—along with the device used to capture them—be subjected to further forensic examination.

SIGNATURE AND ATTESTATION

